The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 3. JANUARY 16, 1937. VOL. 49.

The Duties and Prospects of a Municipal Veterinary Officer*

H. E. BYWATER, M.R.C.V.S.
VETERINARY OFFICER, WEST HAM CORPORATION

The duties of a municipal veterinary officer are governed by local conditions and the terms of his appointment. Local authorities have certain statutory duties to perform and these duties are entrusted to the various officers of the authority. Some duties must legally be executed by certain specified officers, other duties may be carried out by any person duly appointed for the particular duty. Thus all examinations of dairy cattle under the Milk Acts and Orders must be made by a veterinary surgeon appointed for the purpose, likewise all examinations of animals made under the Diseases of Animals Acts are required to be made by a veterinary surgeon but other inspections and work under the Diseases of Animals Acts may be performed either by a veterinary surgeon or any other person appointed for the purpose by the local authority. The inspection of meat and other foods may be made by the medical officer of health, the sanitary inspector or any other person duly appointed by the local authority. Although veterinary surgeons may be appointed for work in connection with food inspection under the last category it is the usual practice to appoint veterinary surgeons as sanitary inspectors for the purpose of food inspection in order to give them adequate legal authority. Other examples might be quoted but, from what has been said, it should be apparent that the duties of a veterinary officer of a municipality may be, and indeed are, very varied.

Most veterinary officers employed by the towns are occupied to a large extent with the inspection of meat and other foods, although in one large town the veterinary officer has no part in the meat inspection services of his authority. Some veterinarians confine their activities to the *ante-* and *post-mortem* examination of animals in public and private slaughterhouses, others both with work in the slaughterhouses and with meat exposed for sale in shops and market places. Some have also to enforce the regulations under the Merchandise Marks Acts, *i.e.*, to ensure that meat exposed for sale is correctly marked to denote its origin (home produce, Empire or foreign).

In addition to meat inspection the veterinary officer may be required to inspect other foods including fish, cereals, fruit, vegetables and milk products (including ice cream).

The municipal veterinary officer is also concerned with the inspection of milch cattle kept within his area and in the examination, in consultation with the veterinary representative of the producing area, of any cattle from a herd which has produced milk exposed for sale in his town and which, upon examination of a sample of this milk by the town authority, has been found to be infected with *Mycobacterium tuberculosis*. Now that whole-time veterinary staffs are being appointed by the county councils this latter duty is not regarded as so urgent a matter as formerly.

The veterinary officer will be required to carry out the examinations of live and dead animals which may be necessary under the Diseases of Animals Acts and the various Orders made thereunder, whilst in many towns he will not only be appointed the veterinary inspector under these Acts but also the inspector. As the inspector he will issue licences for the movement of animals, make inspection of premises to ensure that all swill, etc., fed to pigs is first boiled for at least one hour, examine the registers of pig castrators, stock owners, etc., and the hundred-and-one odd duties incurred in carrying out the provisions of the Acts and Orders. Should there be dockyards in his area his duties will entail work in connection with the shipping industry.

To these duties may perhaps be added the enforcement of the provisions of sundry other Acts and Orders such as the Performing Animals (Regulation) Act, the Fertiliser and Feeding Stuffs Acts, etc.

The veterinary officer may also be required to render professional services to the transport horses kept by his council and also to the herds of milch cattle and other animals which his authority maintain at the various institutions and farms attached thereto.

*Paper presented on the occasion of the centenary celebration of the Royal Veterinary College Medical Association, Camden Town, November 5th, 1936.

So much for the duties. What are the prospects? Unfortunately they are as small and as limited as the duties may be large and varied. At one time the towns offered practically the only venue, apart from the Ministry of Agriculture, for a veterinarian who desired to take up a whole-time appointment in State medicine, but although a few new posts have been created in the towns in post-war years the opportunities for employment, with any sort of prospects of promotion, are severely limited and are completely overshadowed by the prospects which county service affords. The highest paid posts in the State services are to be found in one or two of our towns but the majority of the salaries paid to municipal veterinary officers are not sufficiently attractive to warrant a young graduate entering the municipal services when the prospects offered by the county services are considered.

A young man who has had experience in a town will be better fitted to take up a county appointment than one who lacks this experience —if only for his experience in meat inspection and the routine examination of carcases affected with tuberculosis, which he will be able to make efficiently and speedily after a year or two spent in the slaughterhouse. Town experience, however, will not necessarily recommend his application to the county council; indeed, it may actually prove a disadvantage, for the town veterinary officer, by many years of agitation for a pure milk supply, has done much to force the recent trend of legislation and the consequent establishment of county veterinary services, and this increase in county expenditure has not made the municipal veterinary officer a popular person with the county councils. There are signs, however, that in certain parts of the country this discrimination is not so acute as formerly.

Finally, I would urge all young veterinary surgeons who intend to enter municipal services —and I think the county veterinary officers will agree also with regard to their work— first to enter private practice and get experience in general practice, thereby gaining a comprehensive view of veterinary practice and fitting themselves more thoroughly for the public services.

The Duties and Prospects of a Veterinary Inspector of the Ministry of Agriculture*

ESMOND BROWN, M.R.C.V.S.
Superintending Inspector, Diseases of Animals Division, Ministry of Agriculture

Your Secretary has asked me to tell you, in 15 minutes, what are the duties and prospects of a Veterinary Inspector of the Ministry of Agriculture.

The question has from time to time been put to me by curious-minded people: "Mr. Brown, what exactly *is* your work?" and I have been constrained to reply in the words of a fictional character: "That, sir, *that* is where you 'ave me."

After more than 27 years of it, there are still a few things I have not been asked to do, but there may yet be some new revelation in the way of duties, and I feel that I do not yet know their limits. As to the prospects, although unfortunately not in the same doubt about limits, I have not much confidence in making a prophecy, having tried my hand at it before, and been wrong every time.

In this state of uncertainty, of one thing I am quite certain. The duties and prospects of a young man joining now will not be the same as mine have been. In the first years after I joined, quite a fair proportion of my visits to farms were made in a hansom cab. Just think of that, and then you will not be surprised when I tell you that if a young man joins now, aeroplanes will probably be old-fashioned by the time he comes to retiring age, and imagination boggles at the thought of accompanying changes.

However, I shall not set out either to frighten you or to allure you. I will neither take you back to the hansom cab nor forward to the time when an inspector bound for a distant destination will walk into a cabinet, turn a black knob and get there on the short waves before you could say "knife."

Instead we will set the stage at about the present day, and imagine a young inspector just appointed, with the prospect of £390 and some odd pounds a year, mileage allowance and a fairly good scale of leave. He first spends some time in special training at the laboratory, at a port and in the field. After that he is usually sent to a field station on his own, and probably for a time his normal duties will consist of dealing with reported cases of swine fever. This work is about as interesting as he

*Paper presented on the occasion of the centenary celebration of the Royal Veterinary College Medical Association, Camden Town, November, 5th, 1936.

likes to make it. There is a certain amount of adventure in it, the interest of going to different places and seeing different people—to-morrow you may be going to a cottage or a castle, you may be met with a shotgun or a bottle of whisky. Even the enquiry, the quest for information, the examination of pigs alive and dead, has its points. In my first year my knowledge of what can take place inside an animal was certainly much increased, as was my knowledge of human nature.

Very likely our young inspector will soon get a change from pigs to sheep, on a spell of sheep-scab and sheep-dipping duty. Eminent members of our profession, with laughter in their voices, have asked what in the world there can be in this simple matter of scab diagnosis. Of course, if you have the acarus presented to you on a needle with a little Canada balsam, there is not a lot in it, but our young man, thrust forth on to moor or mountainside with a few thousand sheep to go at, may think differently. He may think that this sheep-scab business is laughably easy only to those who don't have to do it—and he would not be far wrong. He may have to put up with a good deal of hardship in connection with the sheep work: much of it is in places where rainfall is high, roads bad and hotels not too good, but when he grumbles about these things on his return, all the sympathy he gets is to be told that he looks very well on it. For if he is moderately fit to start, this spell of sheep work will make our young inspector fitter and harder, and when he is suddenly called from the hills by the news that cows in Kent have blisters on their feet, he may need all his fitness and hardness for his first turn of foot-and-mouth disease duty. He will find there is work for a man in this line of duty. It may be hard work and none too pleasant for months on end—or it may turn out to be an "easy one." He may, if disease crops up in several parts of the country in succession, as is often its habit, be pushed from one centre to another, and get the busy time at each. He may sometimes think that a quiet period at his station would not come amiss, but on foot-and-mouth disease duty even at its busiest, there is still a little time to enjoy the companionship of his fellows. He will listen, maybe with bated breath, to the yarns of his seniors, and what happened in 1923. Maybe he doesn't believe quite all of it, but he hopes he will have some such experiences to relate in days to come. If he sticks to it, he surely will.

Time goes on, and if he strikes a busy year or two he soon becomes a young veteran. His pay goes up a bit each year; he gets married and his expenses go up a lot, and perhaps a good deal more in the next few years if nature takes its course. His station may be changed a time or two; he may have a year or two at head office, a year or two at the laboratory, and perhaps that or longer at a port on duties connected with the cattle landed from Ireland or elsewhere.

He enjoys his spells of leave—readily granted and sometimes as readily cancelled. He may have made all arrangements for his holiday, and instead of basking on the beach of Bournemouth find himself burning beasts at Barnsley. At Christmas he may concentrate on turkey at home, or on tongue and cow heels in the farmyard a hundred miles away.

He comes to 40 year and has a look round, finds he has a peculiar and extensive knowledge of the geography of Great Britain, has a good many friends—perhaps a few enemies—is pretty hard up but still carrying on. He is not so sensitive to criticism as he was, for he has so many times played the part of quarry in the great national pastime of baiting the government inspector that he knows all the moves and has even grown to enjoy the game. Promotion? He may have had it, or he may be wearily waiting for it. There is not much fun in waiting on about £600 a year, which a family man doesn't find much difficulty in spending, and he wonders how long it will be before promotion opens things up a bit.

There I think I will leave him for awhile, and become a little more frankly auto-biographical.

When I first joined, friends told me that Government service would get me into a groove. Perhaps they were right, but I think the groove must be one of Tennyson's "ringing grooves of change," or a fancy groove with bumps in it designed for a "Fun City." I have been stationed in various parts of England, in Wales and in Scotland, have carried out duties not merely from Land's End to John o' Groats, but from the Shetlands to the Isles of Scilly, and from the Outer Hebrides to Clacton-on-Sea. This has been varied with voyages across the North Sea in Dutch cargo steamers with horses down below, followed by days of snooping round the quays and cafés of Rotterdam and Antwerp picking up information from horse-dealers and others, estimable and otherwise. I have been fetched down from the mountains and their acarus-ridden sheep, and after a wash and change, have packed up my kit for journeys which took me as far as Budapesth via Warsaw and other places. I have performed duties in 14 Continental countries, and in odd corners of some of them. As you may guess, these journeys were occasioned by special duties, and these don't happen every day, but the possibility gives a little variety to the prospect.

As to the human interest, my duties have brought me into contact and conversation with King George V, at Windsor, and—soon afterwards—with Mr. James Jinks, a one-armed tramp outside a common lodging house at

Maidenhead, with crofters of the Hebrides and glue manufacturers in Czechoslovakia. I have dined in state at grand hotels, and broken my leg on a Saturday night on a cargo steamer and spent the Sunday eating pickled mussels in the Dutch captain's cabin.

You will understand from what I have told you, how it is that I am a little uncertain about the nature of that groove. There may be some suppression of individuality—one cannot always speak one's mind—but how complete the suppression is depends on what individuality a man has at the start. If he has any to speak of he will be able to find an outlet for it.

Now I think we must go back and find that young middle-aged man we left a little while ago waiting for his promotion, and I think we had better put him up to Divisional Inspector, with pay rising from £634 19s. by five annual increments to £738 12s. We may send him to take charge of a Landing Place at Holyhead or Glasgow, or one of the other ports, or to some other place of duty where life is fairly regular and where he will usually sleep at home o' nights. There are advantages in this regularity which some men appreciate more than others, but most of those who have been brought up on field work suffer at times from a form of nostalgia for the uncertainties and excitement of the roundabout job—discomforts, alarms and excursions notwithstanding. On the other hand, during a particularly hectic period the field man may sigh for a seat out of the rain and wind, but I hardly think that feeling is as deep as the other. In this I may be wrong, but I know my own choice, so I will send our newly promoted man to take charge of a district. Some of his work is much the same as before, but he has added responsibility—though it is one of the features of the job that even a young inspector may suddenly find himself in a position of great responsibility with serious issues depending. The District Inspector's background is still swine fever, foot-and-mouth disease and sheep scab, in varying proportions according to the type of district, but his work brings in more of what is known as the administrative side, and he has to keep his eye on the way various general and preventive orders are being enforced in his district. Also there are, of course, other notifiable diseases besides those I have mentioned, and suspected cases are reported from time to time of rabies (still a dread possibility) and glanders, for example. I am not going to attempt to define the division and interrelationship of the work as between Local Authorities and the Ministry in connection with these, but if there is any particularly sticky job on hand the Ministry's Inspector can be fairly sure he will be drawn into it one way or another, and circumstances often call for a mind alert and steady.

Latterly a certain amount of tuberculin testing has come to form part of an inspector's work. How far this may develop I am unable to say.

Above the rank of Divisional Inspector there is a limited number of Superintending Inspectors with salaries rising by instalments to £953 13s.

There are three higher posts still. I have not recently looked up what salaries are attached to them, having lost interest, but if any young gentleman here is thinking of joining the service there will be plenty of time for him to find out about the salaries attached to these posts before there is any danger of their mantle descending on his shoulders.

If an inspector lasts until he is 60, he is retired on a pension—which is not usually considered to be a very large one.

What a young man entering the service now can look forward to is a living of sorts, some variety of work and plenty of change of scene. He will have good times and bad times, disappointments and—just possibly—welcome surprises. One thing he can be sure of, if he sticks to his work and pulls his weight with his fellows, and that is participation in a spirit of comradeship precious beyond price. I have left that until last because to me, at least, it has been the best. I do not say there are no factions, jealousies or antipathies; these form part of the pattern of life inside the service as outside, but through it all runs the pure golden thread of fellowship which puts all regrets into the shadows, and here for once I have confidence as a prophet: whatever changes may come, that spirit will endure even unto the time when the aeroplane of to-day has become just as much of a ghost as my old hansom cab.

INSTITUTE FOR THE STUDY OF ANIMAL BEHAVIOUR

Attention is drawn, in a recent issue of *Nature*, to an Institute for the Study of Animal Behaviour which has been formed by a number of zoologists, naturalists, physiologists and psychologists, with the object of promoting and encouraging research into animal behaviour. "The Institute intends to act as a clearing-house for information regarding work that is being done upon animal behaviour in all its aspects, and to bring together field and laboratory workers for the discussion of their problems. A quarterly bulletin is being issued, and meetings for the transaction of scientific business are held. Those whose work is concerned with animal behaviour in any of its aspects will materially assist the work of the Institute if they will send offprints of their papers to the Honorary Secretary. Dr. J. S. Huxley is President of the Institute, and Mr. F. B. Kirkman is Honorary Treasurer. All information regarding membership and activities may be obtained on application to the Honorary Secretary, R. C. Oldfield, Psychological Laboratory, Downing Place, Cambridge."

PARÔPHYROXIÂ

(HEWLETT'S)

It possesses three distinctive therapeutic powers—*i.e.*, Antiseptic, Purgative and Carminative, and is indicated in all cases of Colitis caused by undigested food, or irritative affections of the alimentary canal, partly, no doubt, by removing acrid irritating secretions or foreign materials, neutralising gaseous fluids, depleting the congested blood vessels and arresting the distended and tympanitic condition of the colon, rendering it the safest and most satisfactory purgative in these cases. It is peculiarly adapted for those cases of Colic so frequently met with in aged horses, who are generally described as " Gross feeders."

It is in these cases that Parôphyroxiâ has a very marked effect in reducing the spasm, arresting fermentation and subduing the drum-like condition of the colon.

It should be well borne in mind that as the drug is purgative in its action no physic ball or other purgative should be admistered, but, if the practitioner deemed it necessary to follow up the treatment with another draught, some simple antispasmodic would not be contra-indicated.

PRICE: **4/6** per lb.; W.Qt. **4/3** lb.

C. J. HEWLETT & SON, LTD.,

35—42, CHARLOTTE STREET, LONDON, E.C.2.

Telephones: Bishopsgate 1172 and 1173. Reg. Tel. Address: "Pepsine Finsq uare, London."

Agents for the Vaccines and Sera of the Bacteriological Institute, Tours.

TUBERCULIN (SUBCUTANEOUS, INTRADERMAL AND OPHTHALMIC), MALLEIN, VACCINES FOR CANINE DISTEMPER (PROPHYLACTIC AND CURATIVE), PNEUMONIA, STRANGLES IN HORSES, AND MASTITIS, Etc. PYOVACCINE FOR SORES AND CONTAGIOUS LYMPHANGITIS, Etc.

ALSO AGENTS FOR THE JENSEN-SALSBERY BIOLOGICAL PRODUCTS, PASTEUR INSTITUTE, PARIS, Etc.

Circular regarding Vaccines, Sera, Aggressins and Bacterins sent free upon request.

ONLY SUPPLIED TO MEMBERS OF THE VETERINARY PROFESSION.

Dr. Burdizzo's

Bloodless Castrators

For Lambs, Calves, Bulls, Pigs. No blood. No risk of poisoning. Simple. The patent Dr. Burdizzo Cord Stop feature ensures retention of cord. The knee rest attachment illustrated frees one hand to hold the cord.

PRICES

Cord Stop Models		Plain Jaw Models	
9 in.	19 in.	8 in.	19 in.
40/- up to	**55/-**	**32/-** up to	**53/-**

Knee Rest 7/6 extra.

Write for the Burdizzo Catalogue.

The Cooper-Stewart Engineering Co., Ltd., 136-7 Long Acre, London, W.C.2.

Keystone

Improved

DISHORNER

for BULLS and COWS

Double "V" shaped knives give four simultaneous cutting surfaces. Eccentric gears apply greatest power at hard outer coating of horn. Fully guaranteed and a most efficient and humane instrument. Descriptive folder on request. Price with cattle leader and rope **£4 10 0**

COOPER-STEWART ENGINEERING Co. Ltd.

137, Long Acre, London, W.C.

Stewart

LIVER FLUKE IN SHEEP

Carbon Tetrachloride has for some time past received recognition as a specific for the treatment of Intestinal Parasites, and special attention is now called to its value for Liver Fluke in sheep. Carbon Tetrachloride is dispensed in Flexible Gelatine Capsules each containing 15 and 30 minims and 1 c.c. and 2 c.c.

	per 100	per 1,000		per 100	per 1,000
Prices:—m.15	2/6	20/-	1 c.c.	2/8	21/-
m.30	3/6	30/-	2 c.c.	3/9	32/-

BISMA-CALNA CREAM

(VETERINARY)

The Combined Carbonates of BISMUTH, MAGNESIUM, CALCIUM and SODIUM

BISMA-CALNA CREAM will be found most effective in the treatment of Acute Gastritis. Ordinary cases of Indigestion are speedily relieved, and in the more serious digestive troubles gratifying results will be obtained by the continued employment of BISMA-CALNA CREAM.

DOSE (for dogs). In acute cases, half teaspoonful to one tablespoonful, according to size and breed, every two hours; later reduced to twice daily.

PRICE **1/6** per lb. Winchesters **1/4** per lb.

JOHN RICHARDSON & Co., Leicester, Ltd.

Manufacturing Chemists.

Established 1793. **LEICESTER.** Incorporated 1891

Eschini's Patented Pincers

For Bloodless Castration

Used for all kinds of quadrupeds. Universally adopted and represented with great success by many Veterinary Surgeons.

The firm of Eschini offers the agency for Britain of its pincers and other surgical instruments to a British veterinarian.

For details please write in *Italian or French* to

Dott. Eschino Eschini, Veterinario, Rosignano Marittimo (Livorno), Italy.

Pincers forwarded only by C.O.D. post.

THE VETERINARY RESEARCH LABORATORIES

288 Finchley Road, London, N.W.3.

Director: TOM HARE, M.D., B.V.Sc., M.R.C.V.S.

Asst. Director: A. B. ORR, B.Sc., M.R.C.V.S.

Laboratory Services undertaken for Members of the Veterinary Profession.

Agglutination Tests, Post-Mortems, Tuberculin, Synthetic Tuberculin, Autogenous Vaccines, Stock Vaccines.

Samples of Milk, Blood, Urine, Fæces, Pus, Skin Scrapings examined.

Telephone: Hampstead 1689. *Telegrams:* Birdlabo, Haver, London.

All Veterinary Drugs and Preparations supplied by

The Boots Chemists

ARE GUARANTEED TESTED FOR PURITY and STRENGTH

with the same skill and care as is given to those used in the general dispensing department.

Ask for Professional Price List and for Discount Terms to Veterinary Surgeons.

Over 1,100 Branches in Gt. Britain

BOOTS PURE DRUG CO., LTD., NOTTM.

The Revelation of the Life-History of the Liver Fluke as an Illustration of the Process of Scientific Discovery*

E. L. TAYLOR, M.V.Sc. (LIV.), M.R.C.V.S., D.V.H.
Veterinary Laboratory, Ministry of Agriculture and Fisheries, Weybridge

The novelist's picture of the research worker is well known to all of us—surrounded by books and test-tubes, his eyes glued to a microscope, he works himself to a shadow; he passes through a protracted period of great discomfort and poverty lasting for a large proportion of his lifetime, during which he toils endlessly at the subject of his researches. But finally a wonderful discovery comes forth with a great burst of publicity: fame comes at last and the genius, rewarded with money and honours, retires to live happily ever afterwards. The popular idea of scientific discovery is much of that nature, and the word "research" and all that attaches thereto is stored along with memories of Hans Andersen in the mind of the man in the street.

We, of course, are above such foolishness; we know better. We know that the research worker does not necessarily live in a garret, and that he sometimes takes an evening off. Many research workers avoid the word "discovery" wherever possible in connection with their own line of work, and some may even have wondered what a "genius" really looks like. Nevertheless it is a prevalent idea, which is by no means foreign to people actively engaged in research, that scientific discovery is dependent upon genius and that progress would be arrested were it not for the advent of a very small number of particularly gifted individuals in each generation. A great deal may be said for this as a romantic and stimulating presentation of the mechanism of social progress, but it differs widely from the true process as revealed by the studies of competent sociologists.

Some very enlightening information is to be found in a recent publication of the Columbia University Press, by B. J. Stern, entitled "Social Factors in Medical Progress," wherein it is shown in a most convincing manner that the progress of medical science has *not* been dependent upon the work of a few gifted individuals and a large amount of historical evidence is cited to show that many important discoveries in the medical sciences and inventions of clinical apparatus have been made quite independently in various widely separated fields of work. Eighteen pages of the book are given to a list of simultaneous duplications of successful research and form a solid background of evidence for his thesis "that progress in medical science is determined solely by the general rise in cultural level throughout the civilised world, and that the same progress would have been made in the absence of any or all of the popularly recognised research heroes." The general love of hero-worship may be held responsible for the homage which is paid to the few clever and industrious individuals who have been chosen by the public to mark each step in scientific progress, and Professor Stern holds that almost the only effect of the absence of any or all of these famous men upon the history of science would have been a transference of popular reward to some other individual, and perhaps to some other country of the world.

The kind of evidence brought forward is shown by the following few examples:—

Eight simultaneous discoveries of the cellular basis of animal and plant tissues; three independent demonstrations of the production of artificial immunity by inoculation of attenuated cultures of *B. anthracis*; three independent discoveries of the culture of the anthrax bacillus; five recorded demonstrations of the clinical value of cow-pox vaccine, prior to Jenner; five independent records of the use of ether as an anaesthetic; the cause of amoebic dysentery independently discovered in Austria, Russia, Egypt and the United States; ten recorded inventions of the laryngoscope, and five separate discoveries of adrenalin. The 380 discoveries which are cited make a very impressive array and it becomes evident that science does not move in occasional long strides but steadily and continuously, without any hesitation, and without dependence upon the efforts of the very small minority of research workers who are chosen by popular acclamation as the heroes of each recognisable stage of advance.

This slow and steady progress of scientific discovery is illustrated very clearly in the story of the discovery of the life-history of *Fasciola hepatica*, which I propose briefly to relate. May I begin by giving a short account of what we now know of the life-history of the liver fluke.

The adult fluke lives in the bile ducts of the liver of sheep, goats, cattle, pigs, horses, rabbits and a large number of other animals and in man, but from a disease point of view is principally concerned with sheep. It lays large numbers of eggs which

*Paper presented on the occasion of the centenary celebration of the Royal Veterinary College Medical Association, Camden Town, November 5th, 1936.

reach the ground along with the faeces. If the weather is warm enough and the eggs are in suitable surroundings they hatch in the course of a few weeks, each giving rise to a minute ciliated creature, just visible to the naked eye, called the "miracidium," or "ciliated embryo." This is capable of swimming about in water for some 24 hours during which time it searches for a suitable snail host. *Limnaea truncatula* is the only species in European countries known to be capable of serving that purpose, although several other species in other parts of the world can do so. On finding the snail the miracidium makes its way in and develops into a simple or branching sac called a "sporocyst." By a process of budding from the cells on the internal lining the sporocyst gives rise to "germ-balls" which develop into secondary bodies called "rediae." The redia is cylindrical, or worm-like in shape, and gives rise by a further process of budding from cells on its internal lining, either to a second generation of rediae or to the next stage, the "cercaria," which ultimately escape through a "birth-pore" formed in the wall of the redia. The cercaria, which somewhat resembles a minute fluke, having two suckers, but provided with a tail, makes its way out of the host snail and, for a short time, leads a free existence in the water, or on wet vegetation; later, throwing off its tail, it very rapidly, in the space of a minute or so, secretes a kind of cement which encloses it and within which it changes into the "encysted cercaria." This is the infective stage.

Everyone must acknowledge this to be a very wonderful piece of scientific information, and those who are of an inquiring turn of mind might be prompted to ask, who discovered it? If the question were put to a well-informed veterinary surgeon, medical man or agriculturalist, he might be able to supply the information that it was discovered by A. P. Thomas, who published a complete account of the life history of the liver fluke in 1882; and if he was particularly well informed he would probably say that it was also published by Leuckart, in Germany, quite independently, in the same month of the same year. If, however, we look into the matter a little further we find that Thomas's and Leuckart's work was, in reality, only the completion stage of a long sequence of new observations which make an admirable illustration of one aspect of the process of scientific discovery.

The early literature on liver rot is quite interesting reading, and if I might digress for a minute or two I should like to make a reference to some of the ideas on the origin of the disease which were current before the true cause was discovered. Many theories were advanced to account for the association of the disease with wet land and wet summers, a favourite one being the poisonous effluvia emitted from marshy soils. One treatise published in 1792 considered seven supposed causes: (1) a poisonous dew, (2) a "gruft" adhering to grass after flooding, (3) luxuriant and quick growth of plants in hot moist weather, (4) grazing on butterwort, white-rot and sundew, (5) poor diet and drinking too much water, (6) to flukes in the liver and (7) the poisonous effluvia already referred to. The author advanced arguments against all except the last theory, regarding flukes as of no consequence.

Another writer considered the rot to be a kind of tuberculosis, and referred to "fluke-worms" as being "almost constant attendants on rot," but as having "kept a great bulk of the learned and unlearned for many years in a perpetual bustle, and having so hoodwinked writers on the subject as to prevent them seeing the truly important point of the disease."

The true cause was not generally recognised in this country until about 1862, after the enquiry instituted by the Royal Agricultural Society.

This coincided with the acquisition of the knowledge of the life history of distomes, which information provided a perfect explanation for the circumstances attending on the development of the disease, but preceded by some 20 years the publication of the life-history of the liver fluke. J. B. Simonds, who wrote on the disease in 1862, said that the more we reflect on what is known of the life-history of trematodes "the more easy of comprehension and simple does the whole subject become, till at last we see no ambiguity whatever belonging to it."

For the story of the discovery of the life-history of the liver fluke we must go back to 1752.

Adult flukes had been known for many years before that time, having been observed in the internal organs of a variety of hosts, but it was not until 1752 that the first record was made of any other stage in the life cycle having been observed. The Dutch microscopist Swammerdam, in the course of the dissection of a snail, then observed some moving objects which he referred to as "worms," and the drawings which he published show, without any doubt, that the objects that he had seen were actually cercariae. His reference to them as "worms" was, of course, only a fortunate guess.

I am indebted to the writings of Max Braun (1879-93) for most of the references to literature and of the historical information here given which appears to me to be of considerable interest, and, so far as I know, has never appeared in the English language. The next reported observation which Braun was able to trace on the life-history of the trematodes was not published until 1773, more than 20 years later, when O. F. Müller reported the finding of the small

creatures, now called cercariae, swimming about in the water. Other authors, Eichorn 1781, and Herman 1783, also observed and studied these creatures and, regarding them as independent animalcules, referred them to the already existing genus *Vibrio*. Müller created the genus *Cercaria* and later Lamark (1815) created the genus *Furcocerca* for other forms of these creatures. As yet there was, of course, no notion of any connection between these *Cercaria*, *Vibrio* or *Furcocerca* and trematodes.

In 1800 Zeder reported the first observations of the hatching of a trematode egg and the escape of the ciliated embryo into the water. During the following 30 years there were several other observations of this occurrence in the eggs of various species of trematodes, and in 1837 Creplin actually observed it in the liver fluke.

In 1807 Nitzsch reported the first observation of the encapsulation of a cercaria in water, and interpreted the occurrence, rather curiously, as "an unusual kind of death." The adult fluke, the egg and the miracidium are now seen to be linked together in one group, and the cercaria and encysted cercaria in another: but no connection had been suspected between the two.

In 1816 Nitzsch remarked on the similarity between the anterior end of a cercaria and a distome, but was emphatic in his expression of opinion that the cercariae were an independent kind of creature, the tail distinguishing them quite clearly from distomes and all other known forms of life.

Two years later Bojanus, who was unaware of the publication of Swammerdam in 1752, observed the connection of cercariae with water snails and saw the redia for the first time. On account of the bright yellow pigmentation of the redia which he saw, imparting a yellow colour to the liver of the snail, he named it the "King's yellows worm," presumably because of the suggestion of King's evil or jaundice. He also actually saw the birth of the cercariae from the rediae, and was the first to express the idea that there might possibly be some connection between cercariae and flukes.

In 1827, nine years later, von Baer reported on his observation of the development of cercariae within the redia, from "germ granules." But although the possible connection with flukes had been suggested by Bojanus the cercariae were still regarded by most authorities as an independent form of life. Ehrenberg (1831) called them "entozoa," and Wagener (1832) "infusoria," and even as late as 1855 they were still regarded by many as phylogenetically independent, Diesing placing them in nine different genera.

In 1835 von Siebold, discussing the hatching of the trematode egg and the liberation of the miracidium, expressed the view that the water birds which carried the flukes became re-infected through swallowing the miracidium, so explaining the existence of parasitic flukes in birds. This was wrong, of course, but he made the important observation that some miracidia contained an embryo showing a remarkable resemblance to the King's yellows worm of Bojanus, *i.e.*, the redia, and he wondered if there could possibly be any connection between the two.

Seven years later, in 1842, the Norwegian investigator, Steenstrup, published an account of his theory of the "alternation of generations" which was to prove a valuable key to the elucidation of the life histories of so many different kinds of creatures. The theory of the "alternation of generations" was defined by Steenstrup in the following words: "as the remarkable phenomenon of an animal producing an offspring, which at no time resembles its parent, but which, on the other hand, itself brings forth a progeny, which returns in its form and nature to the parent animal, so that the maternal animal does not meet with its resemblance in its own brood, but in its descendants of the second, third or fourth degree or generation; and this always takes place in the different animals which exhibit the phenomenon, in a determinate generation, or with the intervention of a determinate number of generations." He fitted the theory to the life-history of jelly-fishes and other forms of life as well as to the trematodes, and said that in his opinion whole established divisions of families of animals must now require to be abolished, since they included only undeveloped forms, "and that several forms which had been regarded as of different species and genera would be found to be stages in the development of one and the same animal."

Steenstrup's application of this principle to the life-history of trematodes contained many fallacies; the redia was regarded in a curious way as the "wet nurse" of the cercariae which, in their turn, were thought to be essential to the existence of the redia; the cercariae were curiously regarded as "trying to return to the snail in order to pupate *because* they had lost their tails," and he considered that the sexually mature fluke must exist in the *snail* which became infected through the cercariae. The theory of the alternation of generations made the specific identity of these many varied forms seem possible, however, and offered a solution to what was previously inexplicable.

Von Siebold immediately took up Steenstrup's idea and, being much more conversant with the parasites, was able to conjecture more correctly; he suggested that the sexually mature fluke, corresponding to any particular kind of cercaria, would be found in the intestines of

DIAGRAMMATIC PRESENTATION OF THE DISCOVERY OF THE LIFE HISTORY OF THE LIVER FLUKE.

The time is divided into decades. A complete line with arrow-heads between any two stages in the life cycle indicates that observation had definitely linked those two together, and a broken line with arrow-heads indicates that the possible connection between those two stages had been suggested but that no definite observation had been made.

Prior to 1752 Sexually mature fluke well known

1752 Swammerdam saw cercariae in a snail.

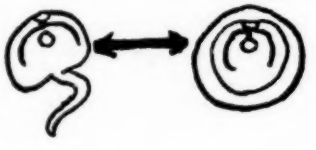
1762

1772 Müller, Eichorn, Herman saw cercariae in water.

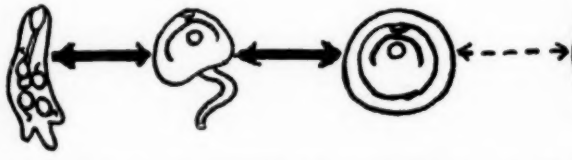
1782

1792 Zeder saw hatching of a trematode egg and escape of miracidium.

1802 Nitzsch saw the encapsulation of a cercaria.

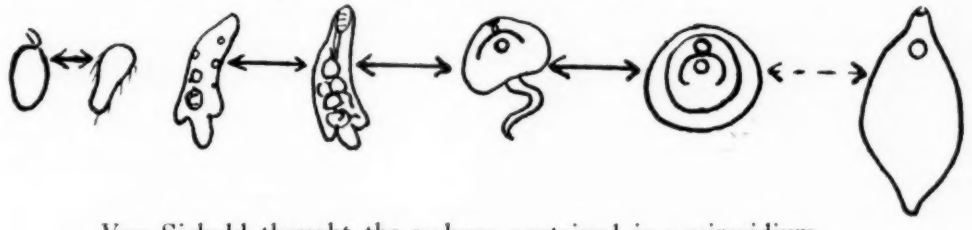


1812 Bojanus described the redia and saw cercariae born therefrom.
He suggested the possible association with distomes.

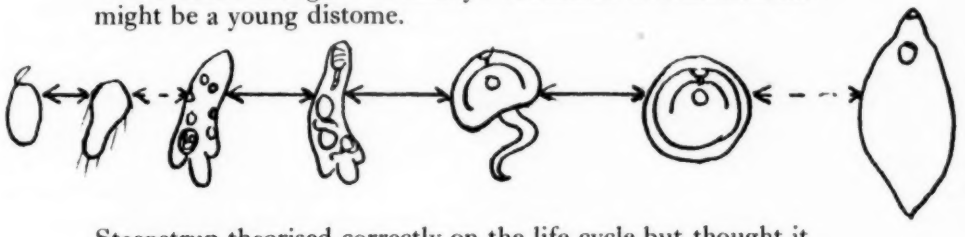


NOTE:—The actual dates of the publication of these observations are given in the text. The dates in this diagram are given only to show their distribution in time.

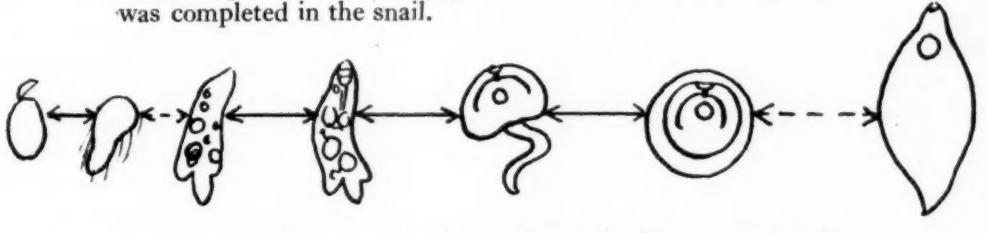
1822 Von Baer saw growth of cercariae in the redia.



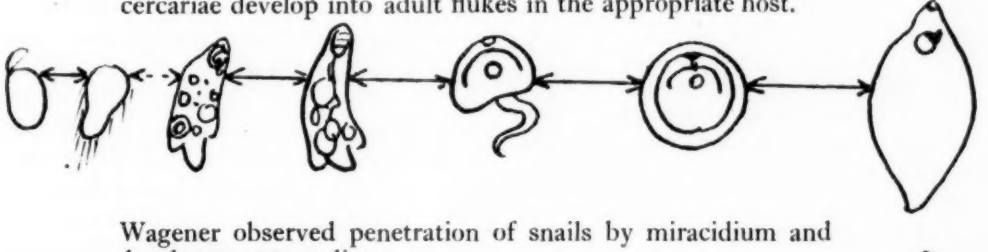
1832 Von Siebold thought the embryo contained in a miracidium might be a young distome.



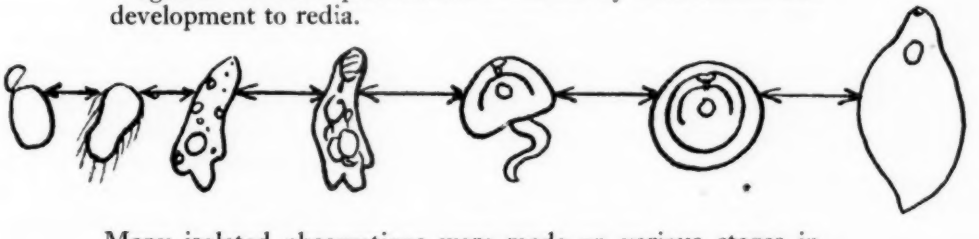
1842 Steenstrup theorised correctly on the life cycle but thought it was completed in the snail.



1852 La Valette St. George showed experimentally that encapsulated cercariae develop into adult flukes in the appropriate host.

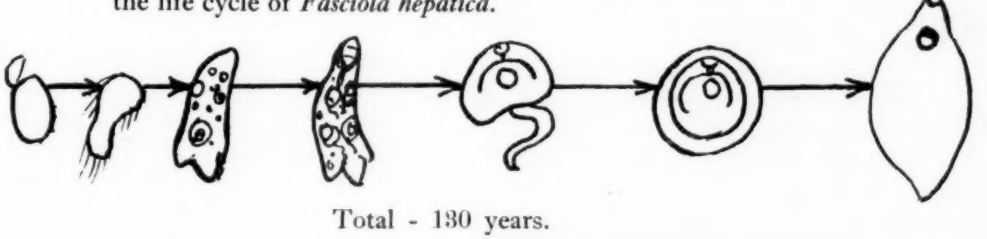


Wagener observed penetration of snails by miracidium and development to redia.



1862 Many isolated observations were made on various stages in the development of various trematodes, and successful linking
1872 of known cercariae with known adults.

1882 Thomas in England and Leuckart in Germany worked through the life cycle of *Fasciola hepatica*.



Total - 130 years.

birds and not in snails. He found the beginnings of sex organs in some encysted cercariae and expressed the view that this stage in the life cycle of a fluke (the encysted cercaria) occurred in invertebrate animals, and the sexually mature stage in vertebrates.

The first suggestion of a definite connection between a specific fluke and a specific cercaria appears, however, to have been made (ten years after Steenstrup's publication) by Leukart who, in 1852, suggested that a certain fluke found in the intestine of predaceous fishes was specifically identical with an encapsulated cercaria found in the gills of certain other, small, fishes on which the final host fed.

La Valette next, in 1855, tried some actual feeding experiments and found that certain encysted cercariae from water snails developed into sexually mature flukes in birds; he also observed that only the encysted cercariae would do this, and that the cercariae which had not yet become encysted were digested in the intestines of the host.

The last link in the chain was soon completed by Wagener who, in 1857, observed the penetration of the miracidium into the snail, and its subsequent development into the redia.

Many publications of isolated observations and accounts of complete life-histories of various species of trematodes followed in the course of the next 20 years, but it was not until 1881 that the true intermediate host of *Fasciola hepatica*, the liver fluke, was discovered and the complete life-history came to light. This new addition to veterinary parasitology was published by Thomas in England and by Leukart in Germany, both in the month of October, 1882, Leukart appears to have confused the identity of the intermediate host with *Limnaea peregra*, in which an abortive development takes place, so that the greater part of the credit for that last step should, undoubtedly, go to Thomas.

The life-history of the liver fluke was thus finally elucidated 130 years after the first recorded observation of the cercaria. It is a very interesting story, to me, and clearly illustrates some aspects of the process of scientific discovery.

The story of the elucidation of this life-history does not show many of the independent simultaneous discoveries referred to by Professor Stern, but it does show, in a very clear way, the small steps and the continuity of the process.

There is an undoubted tendency for Thomas or Leukart to receive all the credit which attaches to the preceding work, as well as their own, in this example. But although the intermediate steps tend to be forgotten in every department of scientific progress they have often required as much persistent effort in research as, or at times more than, the important steps which they initiate, and the conclusion is forced upon us that scientific discoveries are dependent upon the work of ordinary individuals.

The Veterinary Record
January 16th, 1937.

Some Aspects of the Organisation of Agricultural Research

In 1930 the Agricultural Research Council was appointed and to-day this body shares with the Medical Research Council and the Department of Scientific and Industrial Research the duty of giving scientific supervision to research carried out under Government control or subsidised by Government in the United Kingdom. A second duty of the Agricultural Research Council is to advise the Department of Agriculture and the Development Commission on expenditure for agricultural research. Thus at present they administer directly only comparatively small sums (*e.g.*, £20,000 in 1935-36) but advise upon the expenditure indirectly of much larger amounts (*e.g.*, more than £300,000 per annum). In our issue of January 2nd we had the privilege of publishing a letter, not entirely to our advantage, from Mr. John Smith, a member both of the Agricultural Research Council and of our own profession, in which letter was given a brief indication of the functions of the Council. Mr. Smith also rightly corrected an impression that could have been drawn from our editorial on grass sickness and joined issue with us over some of our attempts to counteract the unfortunate deductions that seemed to follow from certain remarks made by Sir Merrik Burrell. In this Mr. Smith has the advantage of a more intimate acquaintance with Sir Merrik, an acquaintance which enables him to fill in the gaps and supply the correct interpretation to any ambiguous phrases. For our part we can only take the words at their usual meaning, and so, while agreeing with Mr. Smith's contention that "Veterinary research workers require no defence," it nevertheless remains our duty to examine immediately and if necessary to deny vigorously any wrongful views concerning our profession which seem to follow upon the utterances of men holding prominent

public positions. We are fully aware that the words used by Sir Merrik were not those of the Agricultural Research Council, but amongst laymen, especially when in the same context the audience is reminded that the speaker is both a member of this Council and the Chairman of the Board of Governors of the Royal Veterinary College, his views are apt to be accepted as authoritative. Mr. John Smith, in his letter, succinctly indicated the difficulties associated with veterinary research and at the same time fairly appraised the work already done, thereby safeguarding against the deduction that because there is at present an insufficiency of men of the right training for the future extension of veterinary research those already engaged upon such research are likewise of the wrong "type." The pity of it is that Sir Merrik had not spoken with similar care. But neither of these gentlemen can be considered as speaking for the Agricultural Research Council, whose views are expressed in its own publications. From its second report, a review of which we publish elsewhere in this issue, it is seen that the Council has practically completed a survey of both the institutes and of the research work concerned with the various branches of agriculture. On the whole the Council appears satisfied with the standard and character of the work which these institutes are doing and remarks that little avoidable duplication occurs; nevertheless it realises that there are difficulties to be overcome before research in animal diseases can be considerably extended.

The Council now is in a better position to appraise continually work actually being done and investigations proposed for the future, and to advise upon financial help. As the greater proportion of agricultural research is financed from Government sources the advisory and supervisory character of the work of the Council is apt to merge into one with executive powers. At the moment its duties are largely concerned with the organisation and further development of present institutes for agricultural research, but in 1935 the Privy Council decided that the Agricultural Research Council can carry on research itself and employ scientific and other staffs for that purpose, either at centres of its own or elsewhere. It is to be expected, therefore, that the Council will, in the future, develop one or more farms and institutes of its own, while continuing to advise upon and support the work at other institutions, in a manner similar to that at present carried out by the Medical Research Council.

With these probable developments ahead, we might pause to consider some of their effects upon veterinary science. Judging by what has already been achieved the latter should benefit materially, for the Council has, through its many committees, helped to organise and to extend research work on animal diseases and is doing its best to procure the optimum conditions and staff for this work. It is stated in the second report that "the Council considers it essential that salaries of Directors and other senior members of the staffs of Research Institutes should be adequate to secure and retain the best men." Such a change, together with the further decision to give scholarships to men who have taken honours in Natural Science to enable them to obtain a veterinary qualification should go far towards ensuring a satisfactory flow of recruits to veterinary research. We agree also with the further assertion that it is no less essential to a truly efficient research service that easy ways out of research should be provided for those who show, after adequate test, that they have no power of advancing knowledge. If these plans are implemented the dearth of veterinary research workers and specialists in allied spheres of knowledge is not likely to continue for long and in addition veterinarians may soon be represented, as they should be, among the workers concerned with animal heredity and genetics, animal physiology and nutrition and dairy research.

The Council's further desire that "a close link should exist between research and teaching," in view of the aims referred to above, is likely to have a beneficial result upon the conditions of employment and so upon the efficiency of the staffs of the veterinary colleges.

These efforts of the Council and their undoubted stimulating effect upon the organisation and prosecution of veterinary research can receive nought but praise from the profession. Whether the advancement of knowledge will continue to flourish best under the control of such a multitude of committees is perhaps open to some doubt, but this will depend largely upon the extent to which the committees attempt to interfere with the actual work of the investigator himself. In the lesser danger of converting research workers into committee men rather than experimentalists the profession may perhaps receive some solace from its small representation upon the important standing committees of the Council.

In conclusion, we cannot do better than endorse the view of Mr. John Smith that our object is similar to his, namely, "to endeavour

to assist in bringing about a better state of affairs than exists at present in connection with the veterinary profession," and we shall always be ready to assist in and to appraise fairly the efforts of the Agricultural Research Council or any other body whose aim is genuinely similar, but we must affirm our right to judge for ourselves and to oppose vigorously, if necessary, any proposed steps which would seem to us to militate against rather than towards this end. We trust that our differences with the Agricultural Research Council will be few and evanescent and that a period of mutual co-operation will ensue. Meanwhile we look forward to the next report of the Council in the hope that the promise foreshadowed in the second and by the appointment of Mr. Smith subsequently to the Council itself, will be fully justified by the progress reported in the third.

TUBERCULIN POISONING

The *British Medical Journal* of December 26th, 1936, quotes the account given by A. Rydén (*Nord. Med. Tidskrift*, October 24th, 1936) of a most stormy reaction to an accidental injection of an enormous dose of tuberculin. A 50-year-old veterinary surgeon, who had hitherto enjoyed perfect health, was engaged in May, 1936, in injecting tuberculin into calves. His syringe was so set that at each injection it yielded 0·1 gram of a solution containing equal parts of bovine tuberculin and a 0·5 per cent. solution of carbolic acid. What probably amounted to all, or nearly all, of this dose—that is, 50 mg. of pure tuberculin—was injected into his left thumb instead of into the kicking calf for which it was intended. The immediate response to this accidental injection was a tingling sensation in the whole of the left arm, the thumb swelling at once and feeling tender. This was at 11 a.m. An hour later the thumb was well washed and held for a long time in very hot water. Four hours after the injection the thumb and the glands in the axilla were painful, and red lines were visible on the arm. In the evening an attack of shivering set in, and the temperature rose to 100·4° F. By eight o'clock it had risen to 103·8° F., and rigors continued. The pain in the thumb was intense, and the patient tossed about all night, suffering from a severe headache. Next morning he experienced pain in almost every joint, and in the evening of the second day he had to be admitted to hospital. The pain in the joints was worst in the shoulders, and the glands in the left axilla were swollen and very tender. A vesicle on the thumb contained perfectly clear fluid. Though recovery ultimately ensued, pain in one shoulder took more than two weeks to disappear.

* * * * *

Allegations that he and his associates had terrorised a district, were made at Surrey Quarter Sessions, at Kingston, when Joby Lee, 32, a dealer, of Molesey Road, Hersham, was found guilty of causing bodily harm to Mrs. Amy Shelby by the furious driving of a pony and trap. Lee was sentenced to twelve months' imprisonment with hard labour.

REPORTS

Agricultural Research Council*

This second report of the Agricultural Research Council brings to an end the period of survey of agricultural research and institutes which the Council thought fit to begin soon after its inception. The report shows that the Council is, in the main, favourably impressed by the work going on, that it considers there is little unnecessary duplication of effort and that most of the work promises to produce either new fundamental scientific knowledge or useful light on practical problems. The view that a close link should exist between research and teaching is accepted, and efforts are being made to re-establish such liaison where it has ceased to exist.

During the period under review the Council received a new charter whereby its number can be increased up to a maximum of 15, of whom not less than four nor more than five are to be appointed on account of general experience of and interest in agriculture, while the remainder are appointed after consultation with the President of the Royal Society, on account of their qualifications in one or other of the basic sciences underlying agriculture. The present membership of the Council is as follows: the Rt. Hon. Lord Richard Cavendish, *C.B.*, *C.M.G.*, (Chairman); J. A. Arkwright, M.A., M.D., F.R.C.P., F.R.S.; Sir Merrik Burrell, Bart., *C.B.E.*, *J.P.*; Professor E. P. Cathcart, *C.B.E.*, M.D., D.Sc., LL.D., F.R.S.; Sir William Cecil Dampier, Sc.D., F.R.S.; Joseph F. Duncan; Sir A. Daniel Hall, *K.C.B.*, LL.D., F.R.S.; Professor Sir Frederick Gowland Hopkins, *O.M.*, D.Sc. F.R.C.P., F.R.S.; Professor T. J. Mackie, M.D., D.P.H., M.R.C.P.E., F.R.S.E.; Sir Thomas Middleton, *K.C.I.E.*, *K.B.E.*, *C.B.*, LL.D.; Spencer W. Mount, and Professor D. M. S. Watson, F.R.S. Dr. E. J. Butler, *C.M.G.*, *C.I.E.*, D.Sc, M.B., F.R.S., was appointed Secretary to the Council and succeeded Sir William Dampier, Sc.D., F.R.S., who resigned, but the latter was subsequently added to the Council and his rich experience thereby retained. The Administrative Secretary is Mr. E. H. E. Havelock.

The Council's work is mainly done by committees, some of which are standing committees, some are appointed from year to year, and others are appointed as the occasion demands. Their considerations cover all fields of agricultural work and for the purposes of this report are dealt with under the following headings:

*[Report for the period October, 1933, to September, 1935. His Majesty's Stationery Office, London, 1936. Price 2s. 0d. net. Postage extra.]

agricultural economics, soil, plants, animal heredity and genetics, animal physiology and nutrition, animal diseases, dairy research, and agricultural engineering. The main interest of the veterinary profession will probably be in the chapter on animal diseases, but those on animal heredity and genetics, animal physiology and nutrition, and dairy research should be of equal interest. Much of the work described briefly in these chapters is of fundamental importance to the profession. Dr. Hammond's work with an inbred rabbit colony is an endeavour to discover the fundamental principles concerned in fertility and growth and precedes the application of its results to larger farm animals. Much work on pigs and poultry upon similar problems is already being prosecuted with some success. These same animals, together with cows, are being extensively examined by animal physiologists and nutritionists, both with a view to the maintenance of sound health and to carcase quality. Many investigations are being made on possible nutritional deficiencies in farm animals such as those of iodine, magnesium, iron, phosphorus, and vitamins. The chapter on dairy research shows how extensive and important is the work being done along these lines and how much still awaits performance, especially along physiological and biochemical lines of attack.

The chapter on animal diseases is devoted very largely to a brief description of most of the work being undertaken by members of the veterinary profession. The work of the Institute of Agricultural Parasitology (although now including two veterinary surgeons) on helminths, of Dr. Hobson and others on sheep blow flies, and that of Mr. Elton at the Bureau of Animal Population upon the many problems associated with our wild fauna are rather the exception but serve to indicate that valuable work is being done by non-veterinary specialists upon problems that might with advantage perhaps have veterinary collaboration. The rest of the chapter is devoted to a rapid survey of the animal disease problems undergoing investigation; both the workers and the institutes concerned are named and suggestions as to the future line of attack are not infrequently made. The problems discussed are B C G vaccination, the tuberculin test, the infectivity of land previously dressed with tubercle bacilli, methods of diagnosis of and immunising against contagious bovine abortion, the diagnosis of Johne's disease in sheep, mastitis in cattle (including prophylactic measures with staphylococcal toxin against this form of the disease and methods based upon selective milking for controlling streptococcal mastitis), swine fever, swine erysipelas, a fairly intensive attack upon the problem of fowl paralysis, the treatment of blackhead in turkeys by arsenical and other compounds, and work on the aetiology of the disabling diseases of horses and its possible connection with diet. It is evident that much work, and much more not here mentioned, is in progress upon the diseases of animals, and this report is useful in correlating these efforts and in showing how the independent investigations can be welded into a whole. The chapter on plants is wide in scope, covering plant physiology, breeding, virus and other diseases, horticulture, insecticides and fungicides, and those on agricultural economics, soil and agricultural engineering are useful pointers to work in progress. The descriptions are terse but interesting. One of the most interesting pieces of work is that of the Council's committee on the preservation of grass and other fodder crops. Results so far obtained seem to promise well for the success of the efforts to obtain economically successfully dried young grass.

Besides the work of scientific supervision the Agricultural Research Council has the duty of advising the Department of Agriculture and the Development Commission on expenditure for agricultural research. During the period under review they thus had to advise on a total expenditure of more than £300,000, while only directly spending themselves £600. Towards the end of the period of the report a new Provisional Note on Administrative Arrangements has been drawn up and agreed upon, and this defines the duties and responsibilities of the Council more clearly and confirms explicitly their power to conduct researches either at centres of their own or elsewhere. We may expect in the future to see developments in the latter direction, the Council gradually acquiring a research staff of its own and possibly one or more research laboratories or farms.

The whole report makes interesting reading and clearly indicates the part played by the Council in the organisation and development of agricultural research.

W. R. W.

* * * * *

Cheshire County Council

CHIEF VETERINARY OFFICER'S ANNUAL REPORT

This report is undoubtedly a very important one as the work detailed therein covers many County Local Authority duties which either are not carried out, or are performed by officials other than County Veterinary Officers. Any County Authority considering the inception or extension of any form of veterinary service can be advised safely to study the facts set out by Mr. A. B. Kerr, and base their future programme accordingly.

The opening pages on "Evolution of the County Veterinary Service" are important and interesting, and, although perhaps open to some criticism on the administrative side, the general

scheme evolved is sound. Mr. Kerr has made full use of the experience of the various other departments controlling milk production within the county at the time of his appointment, and, though he gives credit to the administration of an existing department, it is obvious that his own extensive experience has been the main factor in joining up these other sections to fit in with the development of his own department. He refers to the conditions attached to the issuing of grade "A" licences, repeating in "plain" language the requirements of the Milk and Dairies Order of 1926, which the Ministry of Health, fortunately, drafted in wide and general terms: he does not discuss, however, the present unsatisfactory position.

The details of the work under the Tuberculosis Order, 1925, show the value of routine herd inspections as carried out by the Cheshire Veterinary Staff, 1,258 animals being slaughtered, 620 of which were found at herd inspections. The proportion of the total found on *post-mortem* to be suffering from tuberculous mastitis is very high—529, and is a credit to the microscopical work of the staff, as, out of a total of 3,225 microscopical examinations of milk, 557 were positive. The number of cases of tuberculous emaciation is still very high, 461, especially when compared with 265 cases of tuberculosis with chronic cough, but this is probably due to increased duties and shortage of staff, with the result that routine inspections of non-grade "A" herds were reduced to approximately one per annum. Also, the microscopical work of the veterinary staff limits their time spent in the field. Three hundred and forty-two specimens of sputum were examined, 229 being positive; therefore, after allowing for cases of emaciation, comparatively few cows were slaughtered on clinical examination without a supporting laboratory diagnosis, but only three cases out of a total of 1,258 slaughtered were found to be "not affected" on *post-mortem*.

The report shows that there has been a large drop in the number of cases slaughtered since 1933 (1933—2,023, 1934—1,401, 1935—1,258), but the percentage of advanced cases still remains high (advanced 72·1 per cent. Not advanced 27·6 per cent.). In view of these, the salvage return—£1,107 11s. 6d.—is very satisfactory, the total compensation being £4,948 2s. 6d., leaving a net cost to the county of £129 1s. after deduction of expenses.

The procedure adopted and the results obtained, following the reports under Section IV of the Milk and Dairies (Consolidation) Act, 1915, show very thorough investigation and the former should be copied by other local authorities. There were 236 reports from various sources and 206 cows from these herds were slaughtered. The offending animal in a number of cases had been slaughtered previous to the positive report as the result of a previous routine examination of the herd.

Details of licences under the Milk (Special Designations) Order, 1923, show that Cheshire is progressing rapidly with increased production of "Tuberculin Tested" milk, there being 35 herds licensed within the county. There were 2,086 grade "A" herds at the end of 1935, and it should be noted that in Cheshire, all animals certified as suffering from any disease likely to affect milk are not re-introduced to the herd until certified by a county veterinary officer as having recovered. This, along with the work completed under the Tuberculosis Order, 1925, shows that in Cheshire, the health of the cows in a licensed herd is of primary importance, a point which appears to have been forgotten by many others.

Other parts of the report show that the supply of milk to 295 schools is supervised carefully, and in addition to other work, 5,223 routine herd examinations were carried out, the number of cattle being 144,026, 348 of which were slaughtered under the Tuberculosis Order.

The report is compact and free from unnecessary statistical tables, so that the useful information contained is very accessible.

* * * * *

University of London Animal Welfare Society

TENTH ANNUAL REPORT*

Aims and Objects of the U.L.A.W.S.—(1) To lessen, by methods appropriate to its special character as a university organisation, the pain and fear inflicted on animals by man.

(2) To enlist the influence of university men and women on behalf of animals.

(3) To promote, by educational and other methods, interest in the welfare of animals in Great Britain and abroad.

(4) To obtain and disseminate accurate knowledge of problems relating to animal welfare.

(5) To extend the movement to Continental and other universities.

I. Finance.—It is gratifying to observe from the chapter on Finance that during the past three years the total receipts have gone up from £1,456 to £2,151; the total expenditure has increased from £622 to £1,907.

II. Open and Joint Meetings and Exhibitions.—Included in this section are the "Grey Owl" film lecture; the meeting with the Conference of Educational Associations at University College; the joint meeting with the School Nature Study

*Covering the period October 1st, 1935, to July 31st, 1936.

Union at the Institute of Education; the discussion on poisons for rodents; Professor Garstang's illustrated lecture on the songs of birds; meeting of supporters at Torquay, April 28th; exhibitions at the Animal Fair, Central Hall, Westminster, November 30th; Exhibition of Women's Progress, Sunderland House, W, March 4th-21st; Eton College Natural History Conversazione, March 28th.

III. College Branches: New Branches.—(*a*) University College, (*b*) Birkbeck College, (*c*) Study Group of King's College Branch, with special reference to Winter Term, Spring Term and Summer Term lectures and demonstrations.

IV. Panel of Speakers.—In this section, note is made of some meetings of special interest, lectures to adult audiences, lectures to children, lantern slides and films.

V. Campaign Against the Gin Trap.—Included in this chapter are the basis and method of the U.L.A.W.S. campaign; Select Committee of the House of Lords, also the House of Commons; Report for action by County Agricultural Societies; a new movement against the rabbit menace; publicity and supply of information; organisations supporting the campaign; co-operation with and work of the R.S.P.C.A.; co-operation with and work of the National Council for Animal Welfare; co-operation with and work of the Fur Crusade; humaneness of fumigation: problem of gin trap in Germany; requirements for a humane vermin trap; virus of *Myxomatosis cuniculi*.

VI. Conferences and Excursions.—The autumn week-end conference, 1935, was held at High Leigh, Hoddesdon, in November; the Summer Conference, 1936, through the kindness of General and Mrs. Hoare Nairne, at Turville Lodge, Henley.

Excursions were held at the Pathological Laboratory, Zoological Gardens; the Royal Veterinary College; the National Institute for Research in Dairying, Shinfield; Wye Agricultural College; Zoological Gardens; Zoological park, Whipsnade.

VII. Information Bureau.—This chapter includes the collection of information; Wye College Branch circular to veterinary surgeons; sterilisation by X-rays; publications received, and rabbit control.

VIII. Publications.—Herein are dealt with publications on various subjects such as "Children and their Pets," by M. D. Austin; "The Pathological Effects of Poisons used for Rodents," by J. G. Wright; a message from Grey Owl; monograph on Rat-control by J. D. Hamer; bulletins of activities, October 1st to December 31st, 1935, and January 1st to June 30th, 1936; "The Gin Trap"; "Animal Year Book" vol. IV; on "Rabbit Control—the Rabbit Menace and Gip Trap"; questions and answers on the rabbit problem published jointly by the U.L.A.W.S. and R.S.P.C.A.

IX. Animal Welfare Abroad.—In this chapter are described a visit of Dr. Jean Vinter, Hon. Secretary for Animals Abroad, who paid a second visit to North Africa in 1935 and Dr. Millard's visit to the Columbia University. A cable was also received from Mr. Stead, of the Wild Life Preservation Society, in the following terms: "Wild Life Preservation Society desires you prohibit entry skins of Australian opossum. Queensland Government has declared open season which we are fighting. President, United States, prohibited kaola our request." The open season referred to was declared for the month of July. Action similar to that taken by the President of the United States cannot be taken in this country where an Act of Parliament would be required. The seriousness of the present situation is made evident by the dire results of the previous open seasons, and the rapidly diminishing numbers of opossums which the trappers succeeded in taking on each occasion. For the open period of 1919-1920 no fewer than 7,500,000 skins were taken, and during 1919-1921, 4,260,000 were exported. In 1923 the trappers could take only 1,200,000 while in the last open season, 1931, the number fell to about 700,000. Mr. Stead further reports that some very imaginative reasons for the open season of 1936 were given by the Queensland Government. One reason was an alleged danger that opossum skins might go out of fashion. Another was that the open season would give employment to some of the workless. In India the Rev. Lawrence Linton, now a chaplin at Ferozepore, and an old member of the U.L.A.W.S., instituted an animal shelter at that place where natives may seek help and advice. In New Zealand, "Silent Peter" and Mother Machree have frequently referred to the work of the U.L.A.W.S. in their very excellent humane articles published in the New Zealand Press. It was a pleasure to welcome Lieut.-Colonel Shorthose on leave from West Africa, but less pleasurable to hear his account of the fauna of that region. At the Otani University, Kyoto, Japan, it was arranged to have a small committee meeting to work in three ways; (1) to have lectures at the College with the idea of interesting students and others; (2) to issue some printed matter; (3) to try and erect a drinking fountain. With regard to correspondence with workers abroad the Honorary Secretary for Animals Abroad received reports from many persons and organisations, including the following: Mr. Reynolds, Jerusalem S.P.C.A. (jackal traps sent from Humane Traps, Ltd.); correspondence on the landing of livestock at Haifa, correspondents being informed that landing by the horns or leg has been discontinued; Mr. Aziz, Cyprus S.P.C.A., correspondence on landing of animals in Syria; Government of Puerto Rica (protest sent on the advice of Dr. Millard

against the Government's advertisement of cock-fighting as one of the attractions of the island which belongs to U.S.A.). Tribute is paid to the Editor of the *International Journal of Animal Protection* (Mr. L. G. Langwill) for his very noteworthy undertaking and an important contribution to the literature issued on animal protection.

X. Varia.—As an indication of the very rapid expansion which has been in progress during the past two years, figures are quoted of the number of letters dispatched from the offices and outgoing telephone calls. With regard to further co-operation with the veterinary profession, a letter signed by the President was circulated to veterinary surgeons resident in London. So far 150 have expressed their sympathy with the aims and methods of the U.L.A.W.S. Concerning affiliations and representation at Congresses and on committees, the U.L.A.W.S. is a recognised university society and subject to the regulations for the recognition of university societies and clubs. It is also a member of the Society for the Preservation of the Fauna of the Empire, of the Association of Special Libraries and Information Bureaux and of the South-Eastern Union of Scientific Societies. With regard to the Conference of Educational Associations, since the affiliation of U.L.A.W.S. in 1929, the Chairman has represented the U.L.A.W.S. on the Council of the Conference. The General Secretary represents the U.L.A.W.S. on the National Council of Women. Dr. Kirkman and Dr. Millard have represented the U.L.A.W.S. on the committee set up to scrutinise certain animal films submitted to the censor.

The tenth birthday of the U.L.A.W.S. was celebrated on May 14th by a dinner, when the Honorary Secretary (Captain C. W. Hume, M.C.) was the guest of honour and was presented with a cheque of £100 and an attaché case.

Preparation of Vaccine Lymph.—During a visit to Algiers in 1935, Dr. Vinter visited the Pasteur Institute and found that a change had recently been made there in the method of preparing vaccine lymph. Vaccine lymph is obtained by inoculating calves with infective material and, after a period of incubation, collecting the contents of the vesicles which develop on the animals' abdomens. The change made in Algiers consisted in killing the calf at the end of the incubation period and thus collecting the lymph from the dead instead of from the living calf. On returning to England she made enquiries as to the methods used in the production of vaccine lymph in England. She found that the Lister Institute and Evans Biological Institute killed the calf before extracting the lymph, whereas the Government Lymph Establishment and the Jenner Institute did not do so. Dr. Vinter, representing the U.L.A.W.S., was subsequently granted an interview at the Ministry of Health; the President of the U.L.A.W.S. also wrote to the Ministry asking for a reconsideration of that part of the Therapeutic Substances Act which refers to the preparation of vaccine lymph. An official of the Ministry replied that the Department was impressed by the fact that their procedure did cause concern to reasonable people, and immediate steps were taken to secure reconsideration of the whole matter.

The Honorary Secretary was invited to contribute an article to the *Lancet* on the effects of electric stimulation. It is possible that existing doubts as to the conditions which produce real unconsciousness and those which produce only its appearance may be cleared up in time.

Tributes to the good work in connection with the U.L.A.W.S. are recorded to Mr. John Smith and Mr. Wenman Smith, the latter having been responsible for the collection of £243 for anti-steel trap funds.

XI. Acknowledgments.—In the pages of the Report are recorded many expressions of thanks for individual help, particularly to the staff and the officers of students in colleges of the university for their continued good will. Thanks are also expressed to Messrs. Chas. Rooke, Lane & Company for their most generous help in auditing the accounts in an honorary capacity.

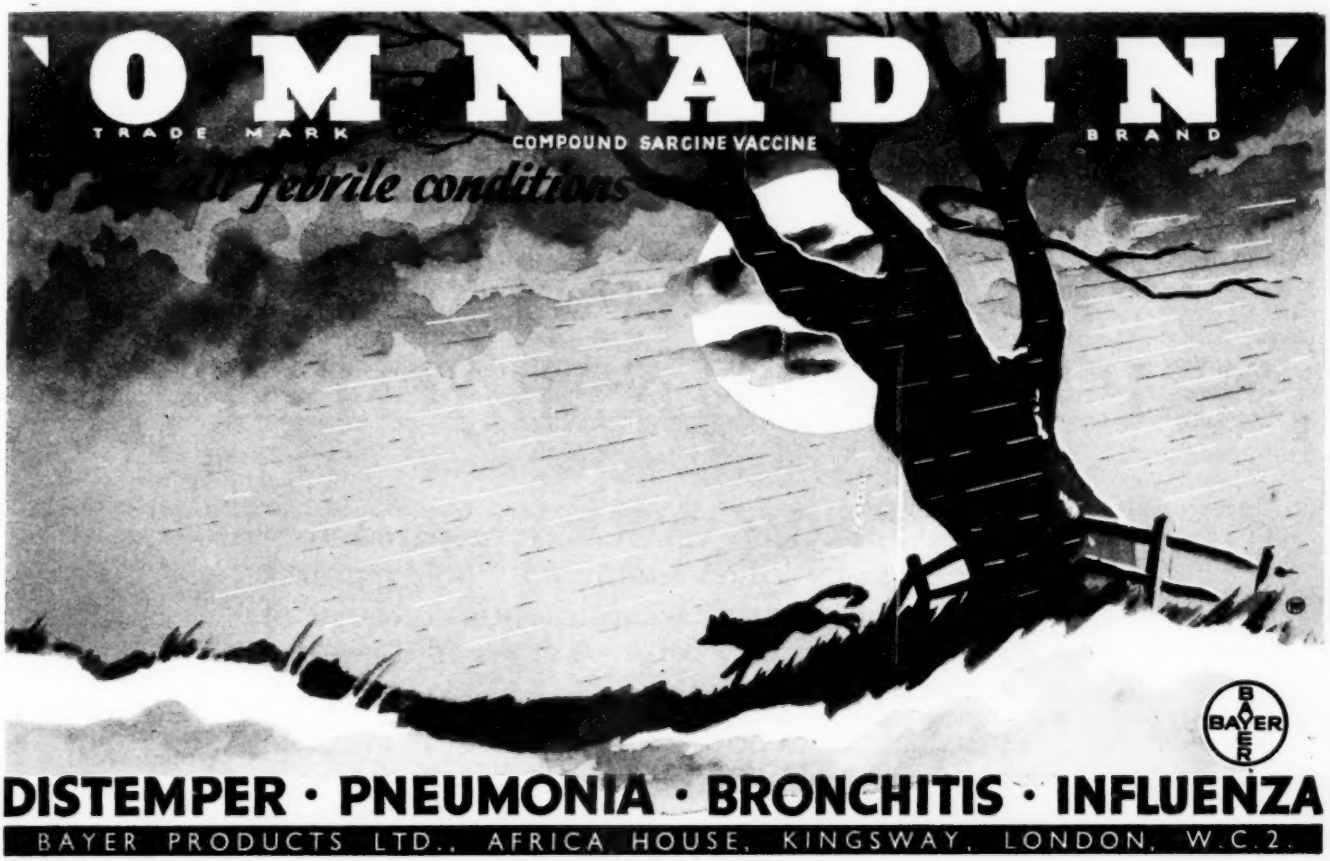
To the Press also the U.L.A.W.S. is indebted for constant support, for without publicity the campaign against the gin trap could not be prosecuted effectively. Thanks are also due to Messrs. Wadsworth & Company, the printers, who throughout the year have given prompt and willing attention to many urgent requests.

J. M.

SHEEP AND WOOL PRODUCTION IN NORTH-EASTERN ASIA

A "research item" in *Nature* of December 26th, 1936, reads as follows:—

"The total sheep population of China, Inner Mongolia and Manchukuo is round about 30,000,000, mostly run under nomadic conditions and carrying a low wool crop averaging only about 2·6 pound a head. I. Clunies Ross points out (Pamphlet No. 65, Council for Sci. Ind. Research, Australia: Melbourne, 1936) that improved wool production by crossing between native and merino sheep is difficult because of climatic conditions and the effect particularly of the severe winter upon pastures, and would entail housing and hand-feeding during six months of the year. In Japan, sheep-rearing is not likely to become a major industry, but the movement of the Japanese and Chinese markets from cotton and silk to woollen materials indicates a prospect of further demand for wool, and since both nations are developing their own woollen factories, the demand will be of direct benefit to the export from Australia of raw wool, from which the imported tops are manufactured."



WHEAT GERM OIL

For the Treatment of the forms of

STERILITY AND ABORTION

associated with deficiency of Vitamin E

WHEAT GERM OIL, guaranteed to contain 40 Pacini-Linn units per gramme of Vitamin E, is obtainable from:—

F. W. BERK & CO., LTD.

52/4 LEADENHALL STREET
LONDON, E.C.3

Telephone: Royal 5034

By whom further particulars and samples will be gladly supplied on application

HAEMORRHAGIC SEPTICAEMIA BACTERIN

(P., D. & Co.)

A BACTERIAL VACCINE prepared from chemically killed undiluted whole cultures of the haemorrhagic septicaemia group of organisms, including *Bacterium bipolaris bovisepticus, ovisepticus* and *suisepticus.*

Haemorrhagic Septicaemia Bacterin is suitable for the prophylaxis and treatment of haemorrhagic septicaemia in all species of domestic animals.

For prophylaxis the dose for cattle, sheep and swine over 100 lbs. in weight, is 5 c.c. For animals under 100 lbs., 1 c.c. may be given for each 20 lbs. of body weight. These doses may be repeated after an interval of two days. Chickens may be given 1 c.c. doses for prevention of fowl cholera.

For treatment of cattle, sheep or pigs, suffering from haemorrhagic septicaemia, the doses indicated above may be repeated every two or three days, as long as indicated.

Haemorrhagic Septicaemia Bacterin (P. D. & Co.) is issued in bottles of 50 c.c. and 250 c.c.

Parke, Davis & Company

50, Beak St., London, W.1

Laboratories : Hounslow, Middlesex. *Inc. U.S.A., Liability Ltd.*

ABSTRACTS

[**The Life History of Psoroptes communis var. Ovis, with particular reference to Latent or Suppressed Scab.** Downing, W. (1936.) *J. Comp. Path. & Therap.* **49.** 2 and 3. pp. 163-180 and 183-209.]

This paper is divided into two parts dealing (*a*) with the life history of the parasite, and (*b*) with the clinical aspect of sheep scab. By means of observations carried out on acari maintained on the living sheep in a specially constructed cell, moved at intervals of three or four days on to a new area of shaved skin, the author was able to follow the complete cycle of changes throughout the life history of *Psoroptes communis* var. *ovis*. It was found that in Great Britain the duration of the life cycle varies from ten to twelve days. The period which elapses from the first appearance of the larva to the commencement of oviposition is usually eight days, but the male requires two-and-a-half to three days longer than the female to reach sexual maturity. Females lay about 35 or 40 eggs each, the rate of oviposition varying very considerably with temperature and possibly also with humidity, although the evidence of this was not definite.

The clinical observations were carried out on eleven sheep, in which the author followed the onset of a latent period with the approach of the summer months and a recrudescence of the disease in the autumn. In some sheep recovery may be complete during the summer, but in many there is a relapse in the autumn. Acari are continuously present during the latent period in such situations as the infra-orbital fossae, the inguinal folds, the scrotum of the wether, and the tail. Apparently there is no change in their life cycle during this period, but as autumn approaches the mites tend to migrate to the general body surface. A sheep carrying the latent form of scab may show no symptoms at all, and the introduction of these sheep is, doubtless, often responsible for the infection of clean flocks.

The most favourable time for dipping is the autumn.

E. L. T.

* * * * *

[**Nematodes in Sheep in Iceland. Experience with Carbon Tetrachloride Drenches.** Dungal, N., and Gislason, G. (1936.) *J. Comp. Path. & Therap.* **49.** 3. 210-217.]

A survey recently carried out on the parasitic worms of the stomach and intestines of sheep in Iceland showed *Ostertagia circumcincta*, *Nematodirus filicollis* and *Bunostomum trigonocephalum* to be very prevalent. *B. trigonocephalum* is considered by the authors to be the most harmful species in Iceland, as petechiae in the mucosa of the small intestine, caused by the presence of numbers of these parasites, appeared to run parallel with a poor condition of the carcase in the numerous sheep which were examined.

A limited number of observations were carried out on the effect of treatment with oil of chenopodium, arsenic tablets, a solution of copper sulphate, an infusion of tobacco, and carbon tetrachloride. This last mentioned gave the most satisfactory results and, after a repetition of the trial, in which the favourable results were confirmed, some 186,000 1 c.c. capsules were distributed to farmers. Subsequently a mixture of carbon tetrachloride and liquid paraffin was used instead of the capsules, on account of its comparative cheapness, and equally good results were obtained. Fasting for 12 to 24 hours before and after the administration of this anthelmintic dose is advised, and it is considered that the low death-rate from intoxication (0·007 per cent.) was largely a result of this precaution.

E. L. T.

* * * * *

[**Preliminary Studies on the Poisonous Properties of the Species of Ticks Occurring in Yugoslavia.** Mlinac, F., and Oswald, B. (1936.) *Yugoslav. Vet. J.* 8. [18 refs.] Summary in English.]

In studying outbreaks of tick paralysis in Yugoslavia the authors undertook an investigation into the toxic properties of *Hyalomma aegyptium*, as this was the most prevalent tick found on domestic animals at the time. They found that a bacteria-free extract of the eggs of this tick, at a dose of 0·5 c.c. per kilogram body weight, was fatal to guinea-pigs in six days, causing a reduction of body temperature and symptoms of paralysis. Rats and mice were resistant to the toxin, whilst rabbits required a larger dose.

U. F. R.

* * * * *

[**Haemophilia.** McKinna, W. R. (1936.) *Vet. J.* **92.** 10. 370-371.]

A description of four cases of excessive bleeding in Aberdeen terriers is given. These cases were all whelped by the same dam. The first case showed excessive oozing of blood after the removal of a fibroma from the carpus. Later this case died following an extensive haematoma in the right groin after a slight blow. The second case followed the removal of a tumour. The third case occurred after a deep cut on the head and fighting wounds of the ears. The fourth case was not seen by the author, though it is cited.

[The evidence presented seems hardly sufficient to justify labelling this syndrome haemophilia, in view of the similar conditions in man that may be confused with the disease.]

D. L. H.

REVIEW

[Anatomie Régionale des Animaux Domestiques. Fasc. I. Généralités sur les Equidés. E. Bourdelle et C. Bressou. Edition 2me. pp. viii + 195. 93 figs. 45 francs. Paris: J.-B. Baillière et Fils. 1937.]

Inasmuch as a second edition has been called for, it is reasonable to assume that a book of this kind meets a need—in France, at any rate. So far as the present writer knows, there is no work of a similar kind in any other language. Consequently, a comparison is impossible. In the arrangement of the text, the fasciculus now issued resembles, in a general way, any other book on systematic anatomy, with a difference. Since it purports to deal with "generalities" only, detailed descriptions are not be to expected; but it is difficult to see what purpose can be served by, for example, a description of the radius that is embraced in three lines, or of the heart that is covered by less than two pages of text. A description of the brain, on the other hand, occupies over 50 pages. But it may perhaps be said to be unfair to review what is only the first part of a work that, we are led to believe from its title, will ultimately deal with the *regional* anatomy of domestic animals generally.

INTERNATIONAL GRASSLAND CONGRESS

The fourth International Grassland Congress will be held in Great Britain, in July, under the Presidency of Professor R. G. Stapledon, Director of the Welsh Plant Breeding Station and the Imperial Bureau for Herbage Plants, Aberystwyth. Delegates (Members of the International Grassland Congress Association), will attend from Great Britain, the British Dominions and Colonies, the United States, and numerous other countries.

The paper-reading sessions will be held in Aberystwyth from July 13th to 19th, but intending participants will be able to join in a tour of centres of grassland interest and selected farms both before and after these sessions. Delegates will be able to choose one of a number of options to take part in the whole congress, or certain sections of it. Special addresses will be given on certain evenings at Oxford, Cirencester, Aberystwyth, and Newcastle.

The paper-reading sessions to be held in Aberystwyth will be divided into three plenary and two sectionalised sessions. The sectionalised sessions will deal with numerous aspects of the grassland problem, including ecology, pasture and range management, seeds, mixtures, plant breeding, genetics, and seed production, manures and fertilisers, nutritive value of pastures, fodder conservation, and grassland economics.

Particulars regarding the acceptance of papers and dates for receipt of abstracts and paper manuscripts may be had from the Joint Secretaries, Agricultural Buildings, Aberystwyth, Great Britain, to whom requests for the preliminary programme and application form for membership and all other correspondence regarding the congress should be addressed.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Jan. 16th.—Scottish Branch, N.V.M.A., General Meeting at Perth, 2 p.m.

Jan. 18th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, 4 p.m.

Jan. 22nd.—Annual Meeting and Dinner, Royal Counties Division, N.V.M.A., at Reading, 6 p.m.

Jan. 27th.—Meeting of the Lancashire Division, N.V.M.A., at Liverpool, 2.30 p.m.

Jan. 29th.—Meeting of the Yorkshire Division, N.V.M.A., at Leeds, 3 p.m.

Jan. 29th.—Royal (Dick) Veterinary College Annual Dance in the College Hall, 8 p.m.-2.30 a.m.

Jan. 29th.—Meeting of the Sussex Division, N.V.M.A., at Brighton, 2.30 p.m.

Feb. 26th.—Annual Dinner and Dance of the Yorkshire Division, N.V.M.A., at Leeds.

* * * * *

PERSONAL

Forthcoming Marriage.—The engagement is announced of Mr. H. Pearson Blackie, M.R.C.V.S., of Burnley, son of Mrs. M. Blackie, of Exeter, and formerly of Wavertree, Liverpool, to Miss Mary Tattersall, only daughter of Mr. and Mrs. Tattersall, of Hillside, East Park-road, Blackburn. Both Mr. Blackie and Miss Tattersall were students in the Liverpool School of Veterinary Science, qualifying in December last, and immediately entering into membership of the N.V.M.A.

Mr. Blackie was an officer of the Guild of Undergraduates and at one time was a playing member of Earle Football Club.

. . . . .

Mr. Brennan DeVine Injured.—Readers will deeply regret to learn that Mr. Brennan DeVine, M.C., F.R.C.V.S., D.V.S.M., Chief Veterinary Officer to the City of Birmingham, was confined to bed for a fortnight as the result of injuries sustained on December 24th, when his horse jumped into some barbed wire and fell with him. In struggling to get up Mr. DeVine was kicked in the abdomen, internal haemorrhage resulting. We are glad to report, from information received as recently as Thursday last, that Mr. DeVine is now able to get out each day and expects soon to be fully recovered.

. . . . .

On Leave.—Mr. G. B. Simmins, M.R.C.V.S., D.V.S.M., Assistant Veterinary Pathologist, Palestine, has arrived in this country on leave.

* * * * *

HORSE-DRAWN TRAFFIC: PROHIBITION REGULATIONS

Important London Thoroughfares Affected

On Wednesday last the announcement was made that the Ministry of Transport will bring into force on Monday regulations prohibiting slow traffic, including horse-drawn vehicles, in

six main thoroughfares in Holborn and Westminster. The restrictions will apply from noon to 7 p.m. from Monday to Friday and from noon to 3 p.m. on Saturdays.

Exception is made in the case of vehicles calling at premises in the scheduled streets, or streets to which there is not any other access. The streets involved are Regent Street, New Oxford Street, Holborn, High Holborn, Old Bond Street, and New Bond Street.

It will be recalled that this Association, in common with other bodies concerned to promote the welfare of the horse-owning community and to safeguard their rights, has made frequent and vigorous protest to the Minister against his announced intention to bring these restrictions into force. We deplore the decision that has been arrived at and can only hope that the opposing representations will at least have the effect of preventing an extension of the scope of these regulations.

* * * * *

R.C.V.S. OBITUARY

Kirk, William, Brackley Hotel, Cliftonville, Margate. Barrister-at-Law. Graduated, Edinburgh, July 27th, 1883. Died January 9th, 1937, aged 73 years.

Radcliffe, George, Lyndhurst Road, Birkdale, Southport, Lancs. Graduated New Edinburgh, December 16th, 1889. Died January 5th, 1937, aged 72 years.

. . . . .

The Late Mr. William Kirk, M.R.C.V.S., Barrister-at-Law

It is with much regret that we have to record the death, on January 9th, of Mr. William Kirk, veterinary surgeon and barrister-at-law. Mr. Kirk had been in failing health for some months and, whilst on a visit to London over Christmas, he was seized with severe attacks of angina pectoris, for which he had to enter a nursing home.

Mr. Kirk, who graduated at the Royal (Dick) Veterinary College in 1883, was very well known in veterinary and legal circles, and conducted an extensive practice in London for nearly 40 years. At the close of the War, however, he retired from practice and the reins were taken over by his son.

Mr. Kirk was an exceedingly active and virile member of the profession whose jovial and generous disposition seldom failed to ingratiate him affectionately in the memories of those with whom he came in contact.

It was directly due to his representations and influence that the fees allowable to veterinary expert witnesses in courts of summary jurisdiction were raised (even above those permissible for medical witnesses) to 15s.

He it was who challenged in the courts the ruling of the London County Council that M.sR.C.V.S. should pay a tax for the use of the R.C.V.S. crest. He won the first round at Bow Street Police Court but upon appeal in the High Court, he and the profession lost the day. The costs of that litigation were heavy but his veterinary colleagues generously provided a fund which considerably lightened the burden.

Mr. Kirk held some excellent appointments in his active days, amongst which were those as veterinary surgeon to the Westminster City Council, the St. Pancras Borough Council, the Army and Navy Stores, the R.S.P.C.A. (before this body appointed a whole-time veterinary surgeon), the Metropolitan Police, Messrs. Pickfords, Ltd., and some of the largest insurance companies in the country.

His capacity for work and for study was exemplified by the manner in which he studied law simultaneously with the conduct of a most exacting practice, in due course being called to the Bar of Lincoln's Inn.

His life was well and usefully spent, and he died at the age of 73 mourned by a sorrowing wife, daughter and son.

The interment took place at Margate Cemetery on January 13th.

* * * * *

UNIVERSITY OF LONDON EXAMINATION IN VETERINARY SCIENCE

Following is the December, 1936, Pass List issued by the University of London in connection with the Second Examination in Veterinary Science—for internal and external students—(Part ii), all successful candidates being students at the Royal Veterinary College: Allen, Gordon Sedgwick; Crowther, Robert Wade; Mathew, Patrick Alan; Spriggs, David Neville, and Worden, Alistair Norman.

* * * * *

LEGAL NOTES

Diseased Poultry.—A wholesale poultry dealer, of St. George's Street, London, was at Loughborough fined £28 and £5 5s. costs for having exposed for sale 28 hens which were unfit for human consumption.

Mr. F. Entwistle, solicitor to the Corporation, said that the poultry were exhibited in an open pen in the local market. Some of the birds had to be destroyed; others were already dead when inspected.

A sanitary inspector declared that the livers and kidneys of the birds were affected with tuberculosis.

. . . . .

Foot-and-Mouth Disease Notification Delayed.—A case arising out of the recent outbreaks of foot-and-mouth disease in Derbyshire was heard at Bakewell, on January 1st, when Frank Melland, of Monyash House Farm, Monyash, was summoned for failing to notify "with all practical speed" the existence of a suspected case of the disease on his premises on December 15th. He pleaded not guilty and was defended by Mr. F. W. Scorah, of Sheffield.

Prosecuting on behalf of the Ministry of Agriculture, Mr. H. E. James, barrister, submitted that there was foot-and-mouth disease on the defendant's premises on December 13th and probably several days earlier. The premises had been in an infected area since November 23rd.

On December 17th a veterinary surgeon of the Ministry of Agriculture went to the defendant's farm and found that 33 cattle out of 39 were affected. The cattle showed obvious symptoms of the disease, which had existed in them for periods varying from seven days to a few hours. The defendant admitted that on December 13th one of the cows was lame. When the animals were slaughtered it was found that 37 of them were affected. The maximum fine to which the defendant was liable was £185.

It was stated that in all 71 cattle, eleven pigs, and 66 sheep had had to be slaughtered on the farm.

The defendant said he knew that there was foot-and-mouth disease in the district, but until December 17th he had no idea that he had it on his farm. On December 13th one of his cows had "foul of the foot," which was a common disease and caused lameness. He treated the cow for it, and as it did not improve he sent for a veterinary surgeon on December 17th.

In fining the defendant £25 and costs, the Chairman of the Bench (Mr. Roland Burke) said the magistrates had been as lenient as they could. It was vitally important that everyone concerned should assist the Ministry of Agriculture in its difficult task of freeing the country from this disease. This would not be done if farmers did not keep a close watch on their stock and report at once any suspected case. In this case there was no excuse.

. . . . .

Emaciated Cow in Market.—An appeal by Patrick Joseph McHale, a cattle dealer, carrying on business from Impney Farm, Droitwich, against a conviction by the Kidderminster Justices on November 30th, for allowing a diseased cow to remain in Kidderminster Cattle Market, contrary to a bye-law, was heard at Worcestershire Quarter Sessions, before His Honour Judge H. G. Farrant, K.C.

Mr. J. F. Bourke appeared for the appellant and Mr. Donald Hurst represented the police.

Mr. Hurst explained that the bye-law was made in March of last year and came in operation in June. It stipulated that no diseased or unhealthy animal should be allowed to remain in the market-place for the purpose of sale.

In this case it was alleged that McHale was seen driving a black shorthorn cow into Kidderminster Market, and, with the assistance of a drover, attempted to tie it up in a stall. The cow was diseased and in a very emaciated condition.

Mr. John Wright Conchie, F.R.C.V.S., said he saw the black shorthorn cow being driven along the alleyway near the entrance to Kidderminster Market by the owner. He saw the cow's emaciated condition and informed the police. It was, he said, suffering from tuberculosis.

A police constable, who said he was on duty at the market, informed the court that after a conversation with Mr. Conchie he saw Mr. McHale who agreed that the cow was his. When told the cow would have to be removed from the market, he said he need not take it back as he would get someone to buy it. McHale asked a man what he would give for it, the reply being, "We will settle that when we get her in the lorry." He told McHale that he could not sell the cow, but he made no immediate attempt to remove the animal.

Replying to Mr. Bourke, the officer admitted that the cow was out of the market within 15 minutes of his conversation with McHale. To his knowledge the animal was never tied up.

McHale, in evidence, agreed that the cow was in a poor condition, but he had no intention of selling it. He intended sending the cow on to an abattoir in Birmingham. It was to be killed in any case. The cow got out of the lorry with the others. He never intended to go in the market. He did not consider the cow was in the "screw" class.

A haulier said he was given instructions to take all the cows to Kidderminster Cattle Market, with the exception of the black one. This had to be taken to Birmingham for slaughter.

Questioned by Mr. Hurst, this witness admitted that he did not tell anyone a diseased cow had got out by mistake.

An Alvechurch farmer stated that he helped to drive the black cow out of the market. McHale made no suggestion to him to buy the animal, which was "a fine body of beef."

The appeal was dismissed with costs.

. . . . .

"Halt at Major Road Ahead."—On a recent appeal by case stated, it was contended, on behalf of the police, that the sign "Halt at major road ahead" indicated that vehicles must at least be brought momentarily to rest before entering a road junction, and that, in the event of failure to stop, an offence was committed. As against this, it was argued that the sign indicated, not that vehicles must be brought to rest, but that they must be slowed down. Alternatively, it was submitted that the sign was so vague and ambiguous as not to give any indication sufficient to support a criminal charge.

It was held by the King's Bench Divisional Court, that the word "halt" in the indication in question meant "bring to a standstill for a moment." The appeal was accordingly dismissed. [Tolhurst *v.* Webster (*J.P.* 19*th December*, 1936, *p.* 830.)]

* * * * *

EDINBURGH COLLEGE EXTENSION FUND BALL

Described by the Scottish Press as "an event of great social importance not only in Edinburgh but throughout Scotland," a ball on behalf of the Extension Fund of the Royal (Dick) Veterinary College is to be held in the Assembly Rooms, Edinburgh, on Friday, March 19th, which is the eve of the Calcutta Cup Rugby International match between Scotland and England at Murrayfield.

Lady Elphinstone, sister of Her Majesty the Queen, has very kindly accepted the position of Chairman of the committee of patronesses. Large house parties, not only in the vicinity of the Scottish capital, but much further afield, already have been arranged in connection with the function. It is hoped that tickets will be available very shortly, and application for these should be made to the Organiser, Extension Fund Appeal, Royal (Dick) Veterinary College, Edinburgh, 9.

. . . . .

Broadcast Appeal

The Duke of Atholl broadcast an appeal on behalf of the extension fund of the Royal (Dick) Veterinary College, Edinburgh, on all Scottish transmitters on Sunday night. He said that the College had carried out extensive research work on the diseases of every type of domestic animal. The great expansion of the poultry industry had increased the strain on the resources of the College, while the general change in economic conditions under which modern agriculture was carried on had intensified the necessity for research. The College received grants from the Government, but when any extraordinary service was called for the amount available from such sources was insufficient, and they had to look for help from the agricultural industry as a whole, its ancillary industries, and the animal-loving members of the general public. For the expansion of the College buildings they needed £40,000; the Government had promised half up to a maximum of £20,000, provided the governors found the balance.

* * * * *

VETERINARY SERVICES IN NORFOLK

At a recent meeting of the Norfolk County Council, and arising out of a report of the Milk (Special Designations) Committee, a member called attention to a paragraph which stated that the committee had considered a suggestion that the Public Health Committee and the Diseases of Animals Acts Sub-committee should be invited to join with this committee in considering the appointment of a whole-time veterinary officer to supervise and co-ordinate all veterinary services at present controlled by the county council—a suggestion to which the committee did not agree as they did not consider such an

appointment necessary. The member in question urged that this should be referred back to the committee for further consideration and said that Norfolk was behind other parts of the country in this matter. Thirty-four counties already had whole-time veterinary officers. Suffolk had two, Staffordshire nine, Sussex five, and considerable benefit had resulted.

The seconder of this amendment considered that the tuberculous cows of the county should be under the inspection of full-time officers as much as other medical matters.

The Chairman of the Milk (Special Designations) Committee replied that the committee had fully considered the matter and decided that this was not an opportune time for such an appointment. They had 24 part-time veterinary inspectors in the county who had given long, conscientious, and practical experienced service, service that could not be improved by the appointment of a man from outside at a heavy cost to the rates.

The amendment was defeated and the report adopted.

* * * * *

POULTRY DISEASES

Two Orders made by the Ministry of Agriculture came into force on Monday last. The diseases covered by the term "fowl pest," which include fowl plague and Newcastle disease, are now notifiable in the same way as foot-and-mouth disease, sheep scab, and swine fever. The carcases of birds dying with suspicious symptoms will be sent to the Ministry's laboratory for diagnosis, and the farmer concerned is required to take adequate measures to prevent the spread of disease until the outbreak is confirmed or otherwise. An order may be made for the compulsory slaughter of affected birds and others which may have been in contact with them. Compensation is payable for any birds destroyed, except those actually affected with the disease.

The other Order requires auctioneers to disinfect thoroughly the pens and crates in which poultry are exposed for sale at markets. It is thought that several of the diseases which trouble the poultry industry are spread through markets, and the provision now made for the disinfection of market pens should prove helpful. Poultry keepers have suffered so seriously from diseases of one kind and another in recent years that they will co-operate willingly in the Ministry's efforts to improve the position.

* * * * *

MILK MARKETING BOARD INQUIRY ENDED

The public inquiry into the objections to the proposed amendments to the Milk Marketing Scheme ended recently at Niblett Hall, King's Bench Walk. The inquiry, which has been conducted by Mr. N. L. C. Macaskie, K.C., opened last October.

Mr. Michael E. Rowe, representing the Tuberculin Tested Milk Producers' Association, pressed for their continued exemption from the scheme. He said it was incorrect to suggest that any substantial proportion of tuberculin-tested milk was being sold at the ordinary milk prices. It was continuously being dinned into the public that clean milk, tuberculin-tested milk, was what was wanted and what was good for children. There was little evidence of any excess production of T.T. milk at present.

If the T.T. milk producers came into the scheme on the terms suggested there would be no chance of increasing the production of T.T. milk, and there would be a strong probability that production would decrease. If the producers were to preserve their position they had to get a premium of 5½d. on every gallon. The least that they would lose under the Board's suggestions would be 2d. a gallon. Such a loss would wipe out a large number of those who were producing T.T. milk to-day. If they were brought in, he suggested that there should be an independent tribunal to fix prices, and some guarantee that they would get remunerative prices.

Mr. L. C. Graham Dixon, representing the Milk Marketing Board, submitted that the Board did not want to discourage the production of T.T. milk, and had been generous in its treatment of the producers. One-half of the difficulties of the T.T. milk producers had been caused by their being out of the scheme, and the other half had been caused by the number of producers having been artificially swollen, not in response to any public demand, but by what might be called opportunism. The exemption of T.T. milk producers was never asked for by the Minister of Agriculture. It was the Minister of Health who thought they should be exempt, and the Minister of Health was not concerned with the problems of production, which was what they were considering at that inquiry. Exemption was undesirable from the point of view of administration. It should never have been granted, and it was high time that it was withdrawn. The premium position of the T.T. milk producers was bound to weaken in time, and no one could pretend that the cost of production would remain as high as it was to-day.

The Commissioner will present his report in due course.

* * * * *

"REPATRIATION" OF ANIMAL WAR VETERANS

Of 50 British animal veterans of the War, mostly horses but including a few mules, which were recently bought in Belgium by Our Dumb Friends' League, only four—three horses and a mule—were fit to undertake the voyage to this country, and the remainder were destroyed.

The survivors arrived at Liverpool Street Station from Antwerp on Friday of last week in charge of Mr. Keith Robinson, Secretary of the league, who said that they were the first batch of animals which did good service in the War and were left behind to help Britain's allies in the work of reconstruction. All were over 30 years old, but they had benefited by a month's stay in the league's stables in Belgium. One horse, which had been in the Life Guards, was found pulling a van, and the other two had been discovered on farms. The mule had lost its left eye when working in a coalmine. Homes were awaiting the animals and they would be able to end their days in peace.

The work of rescuing other War horses in Belgium would go on until the league was certain there were no more, and attention would then be turned to the plight of others in France, where there were hundreds still at work. Mr. Robinson said that the league hoped to raise sufficient money to put an end to the stigma of horses which served in the Allied cause during the War having to live and work in misery in their old age.

* * * * *

"The year 1936 was much better from the point of view of breeders of pedigree stock. At last we can see a little daylight. Scientific breeders the world over are beginning to realise the value of new blood, and that, for a variety of reasons, the finest pedigree cattle come only from the British Isles."—*Sir Guy Hambling.*

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses: London: Adastral House, Kingsway, W.C.2, and 28, Abingdon Street, S.W.1; Cardiff: 1, St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120, George Street.

	Price Net. s.	d.	*Post Free.* s.	d.
Statutory Rules and Orders, 1936:				
1245. India. Superior Civil Services Rules. Amendment, made November 10th, 1936	0	1	0	1½
1297. Animal. Diseases of Animals. The Fowl Pest Order, dated December 7th, 1936	0	3	0	3½
1298. Animal. Diseases of Animals. The Poultry and Hatching Eggs (Importation) Order, dated December 7th, 1936	0	2	0	2½
1299. Animal. Diseases of Animals. The Poultry Markets and Receptacles (Disinfection) Order, dated December 7th, 1936 ...	0	1	0	1½
1333. Animal. The Cattle Industry (Marking of Imported Cattle) (Amendment) Order, dated December 9th, 1936	0	1	0	1½

* * * * *

According to statistics published by the Institute of Agriculture, Rome, Great Britain eats more meat than any other country in Europe, except Denmark, but a New Zealander consumes almost twice as much as the average Englishman.

The nine parrots which amused visitors to the Crystal Palace are to be sold. In the recent fire which destroyed the Palace the birds were unharmed, but the trustees can no longer accommodate them, and they will be sold at Dorland Hall when the National Cage Bird Show opens there on January 21st. The birds are parrakeets and cockatoos. Normally they lived in the main building of the Crystal Palace, but in cold weather they were transferred to the underground rooms at the north end, and so they escaped in the fire.

* * * * *

A course of six weekly lectures on "Science and the Bacon Industry" will be given at Chelsea Polytechnic by Dr. E. H. Callow, Ph.D., F.I.C., of the Low Temperature Research Station, Cambridge. At the introductory lecture on January 19th, the admission to which is free, the Chairman will be Lieut.-Colonel T. Dunlop Young, O.B.E., M.R.C.V.S., D.V.S.M.

* * * * *

The Ministry of Agriculture have revoked an Order compelling the double dipping of sheep in the county of Merioneth. During 1936 only six cases of sheep scab had occurred in the county.

Advertiser's Announcement

Vitamin E and Sterility

Much work has been done in connection with sterility and abortion, resulting in a wide acceptance of the view that in very many cases these complaints are caused by a deficiency of vitamin E. This vitamin is known to be present in a number of green foods but in minute quantities. The most valuable source at present known is the wheat germ itself, but here the factor of perishability is of the greatest importance. Two years' research are reported to have shown that fresh wheat germ loses approximately 50 per cent. of its vitamin E potency in seven days and 90 per cent. in 14 days. It seems desirable, therefore, that only wheat germ oil extracted from absolutely fresh wheat germ and conforming to some specific standard should be utilised in the endeavour to prevent sterility and abortion.

Diseases of Animals Acts

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 16th to 31st Dec., 1936	37	42	8	370	8	9	28	61	23
Corresponding period in									
1935	24	26	6	657	3	4	37	84	39
1934	24	34	4	396	3	7	45	106	50
1933	19	21	—	—	4	9	53	48	11
Total 1st January to 31st December, 1936	468	549	67	5,114	111	254	249	1,873	1,259
Corresponding period in									
1935	386	443	56	12,444	99	222	477	2,049	1,238
1934	395	453	79	10,302	115	191	684	1,833	1,031
1933	297	345	87	7,805	132	225	578	1,414	901

Note.—The figures for the current year are approximate only.

§ Excluding outbreaks in Army Horses.